

What is claimed is:

1. A bushing structure constructed and arranged to be operatively associated with a shaft of an electric motor, the motor having a housing including a generally elliptical recess therein defined along an axis of the shaft, the bushing structure comprising:
 - a generally cylindrical bushing member constructed and arranged to engage an end of the shaft so as to locate the shaft with respect to the housing and to prevent lockup of the motor, and
 - an endplay member associated with the end of the shaft, the endplay member including a spherical portion constructed and arranged to be received in the elliptical recess so as to control endplay of the shaft.
2. The structure of claim 1, wherein the endplay member is integral with the bushing member and the spherical portion is a generally half-sphere extending from the bushing member.
3. The structure of claim 2, wherein the bushing member has a central axis and includes a recess therein extending along the central axis, the recess being constructed and arranged to receive the end of the shaft.
4. The structure of claim 3, wherein the recess includes a curved portion that is constructed and arranged to engage the end of the shaft.
5. The structure of claim 1, wherein the bushing member also includes a plurality of protrusions extending outwardly from a periphery thereof, the protrusions being constructed and arranged to engage the housing of the motor.
6. The structure of claim 1, wherein the endplay member is in a sphere separate from the bushing member.

7. The structure of claim 1, wherein upstanding ribs extend from a bottom of the elliptical recess so as to define a deformable stop.
8. A bushing structure constructed and arranged to be operatively associated with a shaft of an electric motor, the motor having a housing including a generally elliptical recess therein defined along an axis of the shaft, the bushing structure comprising:
 - means for receiving an end of the shaft so as to locate the shaft with respect to the housing and to prevent lockup of the motor, and
 - means, associated with the end of the shaft, for engaging the elliptical recess so as to control endplay of the shaft.
9. The structure of claim 8, wherein the means for engaging is integral with the means for receiving and the means for receiving includes a spherical portion constructed and arranged to engage the recess.
10. The structure of claim 9, wherein the means for receiving has a central axis and includes a recess therein extending along the central axis, the recess being constructed and arranged to receive the end of the shaft.
11. The structure of claim 3, wherein the recess includes a curved portion that is constructed and arranged to engage the end of the shaft.
12. The structure of claim 8, wherein the means for receiving is a generally cylindrical bushing member including a plurality of protrusions extending outwardly from a periphery thereof, the protrusions being constructed and arranged to engage the housing of the motor.
13. The structure of claim 8, wherein the means for receiving is in a sphere separate from the bushing member.
14. The structure of claim 8, wherein upstanding ribs extend from a bottom of the elliptical recess so as to define a deformable stop.

15. A electric motor comprising:
 - a housing,
 - a shaft mounted for rotation with respect to the housing,
 - the housing including a generally elliptical recess therein, the recess being disposed generally adjacent to an end of the shaft,
 - a generally cylindrical bushing member engaged with an end of the shaft so as to locate the shaft with respect to the housing and to prevent lockup of the motor, and
 - an endplay member associated with the end of the shaft, the endplay member including a spherical portion received in the elliptical recess so as to control endplay of the shaft.
16. The motor of claim 15, wherein the endplay member is integral with the bushing member and the spherical portion is a generally half-sphere extending from the bushing member.
17. The motor of claim 16, wherein the bushing member has a central axis and includes a recess therein extending along the central axis, the recess receiving the end of the shaft.
18. The motor of claim 15, wherein the bushing member also includes a plurality of protrusions extending outwardly from a periphery thereof, the protrusions engaging the housing of the motor.
19. The motor of claim 15, wherein the endplay member is in a sphere separate from the bushing member.
20. The motor of claim 15, wherein the motor is a bi-directional windowlift motor for a vehicle.